

CLAIMS

1. A method of controlling signal launch power of at least one optical signal in an optical communications network, comprising pre-distorting the launch power of the optical signal in accordance with a known value of the bandwidth of a modulation signal used to modulate the optical signal.
2. A method as claimed in Claim 1, further comprising pre-distorting the launch power of the optical signal in accordance with a known value of expected noise on the signal path of the optical signal.
3. A method as claimed in claim 2, wherein the known values are provided by management systems of the optical communication network.
4. A method as claimed in claim 3, wherein the known values are provided by a network and connectivity information unit.
5. A method as claimed in claim 3, wherein the known values are supplied by a supervisory channel.
6. A method as claimed in any one of claims 1 to 5, wherein each pre-distorted optical signal is passed through an optical amplifier.
7. A method as claimed in claim 6, wherein the signal launch power of an optical signal is pre-distorted using a comparator, which compares a signal derived from the output of the optical amplifier with a reference signal dependent on a known value of the bandwidth of a modulation signal used to modulate the optical signal.
8. A method as claimed in any one of claims 2 to 7, in which a known value for expected noise on a signal path of an optical signal is derived from a knowledge

BEST AVAILABLE COPY**ART 34 AMDT**

of the number and type of optical amplifiers an optical signal will pass through in the optical communications network.

9. A method as claimed in any one of claims 1 to 8, in which the optical communications network carries an n channel multiplex, the launch powers of at least one of the optical signals is pre-distorted by an optical amplifier.
10. A method as claimed in any one of claims 1 to 9, in which the launch power of an optical signal with an associated modulation signal of a higher bandwidth is pre-distorted to increase the signal level of the optical signal compared to an optical signal with an associated modulation signal of a lower bandwidth.
11. A method as claimed in any one of claims 2 to 10, in which the launch power of an optical signal is pre-distorted to increase the signal level of the optical signal when the expected noise on the signal path of the optical signal through the network is higher compared to an optical signal having a lower then expected noise on its signal path through the network.
12. Apparatus for controlling signal launch power of at least one optical signal in an optical communications network, comprising a launcher for launching the optical signal onto the network, and means for pre-distorting the launch power of the optical signal in accordance with a known value of the bandwidth of a modulation signal used to modulate the optical signal.
13. Apparatus as claimed in claim 12, wherein the means for pre-distorting the launch power of the optical signal is also arranged to pre-distort the launch power of the optical signal in accordance with a know value of expected noise on the signal path of the optical signal.

BEST AVAILABLE COPY

APT 34 AMDT

14. Apparatus as claimed in claim 13, wherein the known values are provided in use by management systems of the optical communication network.
15. Apparatus as claimed in claim 14, wherein the known values are provided by a network and connectivity information unit.
16. Apparatus as claimed in claim 14, wherein the known values are supplied by a supervisory channel.
17. Apparatus as claimed in any one of claims 12 to 16, including an optical amplifier through which pre-distorted optical signals are passed in use.
18. Apparatus as claimed in claim 17, wherein the pre-distorting means for an optical signal includes a comparator, arranged to compare a signal derived from the output of the optical amplifier with a reference signal dependent on a known value of the bandwidth of a modulation signal used to modulate the optical signal.
19. Apparatus as claimed in any one of claims 13 to 18, in which the number and type of optical amplifiers an optical signal will pass through in the optical communications network is used to derive the expected noise on the signal path of the optical signal.
20. Apparatus as claimed in any one of claims 12 to 19, in which the optical communications network is adapted to carry an n channel multiplex, the launch powers of at least one of the optical signals is pre-distorted by an optical amplifier in use.
21. Apparatus as claimed in any one of claims 12 to 20, in which the pre-distorting means is arranged to increase the signal level of an optical signal with an

BEST AVAILABLE COPY

ART 34 AMDT

associated modulation signal of a higher bandwidth compared to an optical signal with an associated modulation signal of a lower bandwidth.

22. Apparatus as claimed in any one of claims 13 to 21, in which the pre-distorting means is arranged to increase the signal level of an optical signal having a higher than expected noise on its signal path through the network compared to an optical signal having a lower than expected noise on its signal path through the network.
23. Apparatus as claimed in any one of claims 12 to 22, in which the apparatus is an add/drop node.

BEST AVAILABLE COPY

ART 34 AMDT